

Notes from the Owston Collection.

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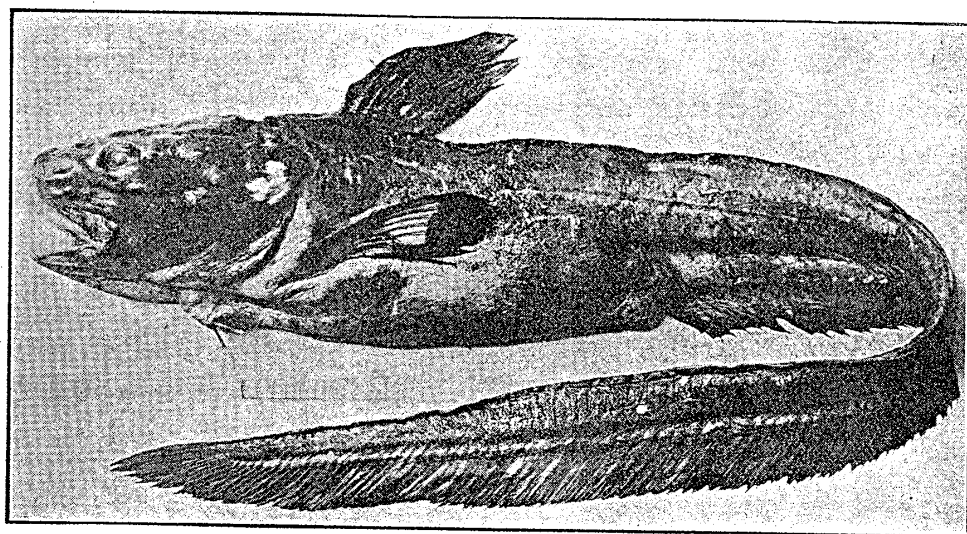
A New Ateleopodid Fish from the Sagami Sea

(*IJIMAIA DOFLEINI* N. SP.).

BY

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On the 13th of April, 1905, Mr. OWSTON obtained an Ateleopodid fish of an unusually large size, which was taken off Enoshima in the Sagami Sea. Though exhibiting the most important characters of the Ateleopodidae, it could be distinguished at once from the two species hitherto known of that family by the subterminal mouth, the short ventrals and the pectorals marked with a large white spot.



Ijimaia dofleini n. sp.

(The scale inserted in the figure is 10 c.m. long, one division being equal to 1 cm.)

I feel indebted very much to Mr. OWSTON for permission to describe this exceedingly interesting form

Ateleopodidae.

I am using the old family name Ateleopodidae instead of Podatelidae proposed by BOULENGER, as I think the name *Ateleopus* (SCHLEGEL 1846),

though essentially the same as *Atelopus* (DUM. & BIBRON 1841, a genus of Batrachians), is sufficiently distinct from the latter to exclude all possibilities of confusion.

Through the discovery of the species described below a slight alteration of the family-diagnosis proves necessary. I give it as follows, making use of external characters only :

Ateleopodidae are Ophidioids with the jugular ventrals reduced to simple filaments, each fin consisting of two rays, the inner of which is rudimentary. Mouth inferior or subterminal; maxillaries protractile in a downward direction; lower jaw included. One short, long-rayed anterior dorsal; no second dorsal. Anal fin very long, confluent with the caudal. Gills four; a slit behind the fourth; no pseudobranchiae. No barbel.

This family as it stands, comprises two genera and three species, all of which have the body and tail compressed, the latter being much elongate and more than half the total length. Scaleless (GÜNTHER, ALCOCK) or partially covered with non-imbricate, extremely thin scales of various size, imbedded or superficial. The genera and species may be distinguished in the following manner

- A — Ventrals long, reaching nearly halfway to the vent or longer; mouth inferior; head as long as the trunk; D 8.
 ATELEOPUS Schlegel 1846.
- a. — Ventrals nearly reaching the vent; anal and caudal together composed of 110 rays; gill-membranes separate, free from the isthmus; pupil horizontal (after GÜNTHER, Chall., Deep-Sea F., 159) ATELEOPUS JAPONICUS Bleeker?
- b. — Ventrals reaching nearly halfway to the vent; anal and caudal together composed of 76 rays; gill openings narrow, the membranes being united to the isthmus anteriorly; pupil? ATELEOPUS INDICUS Alcock 1891.
- B. — Ventrals short, only about as long as one-eighth the distance between the insertion and the vent; mouth subterminal; head much shorter than the trunk [in the type-species contained $1\frac{7}{8}$ times (1.39) in the trunk] D 10. IJIMAIA nov gen.

- c. —Anal and caudal together composed of 107 rays; gill-membranes separate, free from the isthmus; pupil round... ..
 IJIMAIA DOFLEINI nov. sp.

IJIMAIA nov. gen.

Type: *Ijimaia dofleini* nov. sp.

Body completely enveloped in a soft gelatinous tissue, partly covered with non-imbricate, extremely thin scales of various size, imbedded on tail, superficial on belly. Head paralleliped, its length contained nearly $1\frac{1}{2}$ times in that of the trunk; its depth less than that of belly, so that the clavicular symphysis projects above the surface at nearly a right angle. Bones of skull firm, but their connection rather loose. Mouth subterminal, not overlapped by the rather high snout. Upper oral border formed by the praemaxillaries only. Maxillary with a supplemental bone. Teeth villiform, in a short band near the symphysis of praemaxillaries; none on the lower jaw, nor on vomer, nor on palatines. Opercular bones hidden under gelatinous skin. Gill-membranes separate, free from the isthmus, very thick below so that the number of branchiostegal rays cannot be made out without dissecting. Gill-rakers short, projecting laterally, not interiorly; their points beset with slender, pointed spinules; a row of similar protuberances on fifth branchial arch. Eyes of moderate size, with round pupil. Nostrils of each side in a level with the upper border of eye: the posterior one obliquely oval, without elevated border, just before the eye; the anterior ending in a short, anteriorly directed tube. Interorbital space with a deep groove, covered with a thick layer of gelatinous tissue and extending forwards to the tip of snout. Lateral line straight along the middle of sides.

I have named this remarkable genus after Professor IJIMA of the Tokyo Imperial University, an assiduous explorer of its habitat, the Sagami-Sea.

Ijimaia dofleini nov. sp.

Type-specimen (and the only one known) in the collection of Mr. ALAN OWSTON, Yokohama, bearing the individual number 20402; captured

April 13th in deep water (lines lowered to about 700 fathoms) off Enoshima, Sagami-Sea

Total length from tip of snout to insertion of caudal rays 123,8 cm. Head from tip of snout to end of opercular flap as measured in projection, 6,75 in total length; greatest depth of body, below insertion of first dorsal ray, a little less than 7; length of body from tip of snout to anus 2,81. D 10; P 13, the middle rays branched; V 1 and a rudiment; A + C 107, of which 10 may belong to the caudal. All fins with tips of rays free.

Scales discernible on the upper part of tail and on sides of belly, those in the former region very small, completely imbedded; those on belly superficial, concave, round, the diameter of the largest ones equalling that of pupil.

Snout about 2,6 in head, broad, high (distance from symphysis of praemaxillaries to top 6,2 in head, 2,3 in length of snout); anterior profile perpendicular. Mouth rounded anteriorly, moderate, its lateral cleft moderately oblique, maxillary extending to below anterior rim of orbit; distance between the angles 2,4 in head; distance from symphysis of praemaxillaries to end of praemaxillary measured in a straight line 2,6 in head, equals length of snout; a slight, rounded, toothless knob developed at symphysis of praemaxillaries. Postocular part of head 1,9 in head. Horizontal diameter of orbit 5,8, vertical diameter 6,2 in head, 1,1 in horizontal diameter; horizontal diameter of exposed part of eye 5,4, vertical diameter 7 in snout, 1,3 in horizontal diameter. Interocular distance nearly 2,5, distance of supraocular bony ridges (from outer side to outer side) 4,2 in head; these ridges rounded above, their breadth 5 in their distance just referred to. Postocular bone forming a blunt lateral protuberance, without gelatinous layer. Distance between anterior nostril and centre of posterior nostril 5 in snout.

Belly well demarkated from tail by the interhaemal part of the latter being abruptly compressed; the posterior border about vertical. Vent opening in a posterior direction almost horizontally.

Length of pectoral fin nearly 1,5 in head, the middle rays the longest; base 4,2 in length.

Insertion of basal bones of dorsal fin just above upper basal angle of pectorals ; insertion of first dorsal ray a little behind it, horizontal distance 4 in snout ; base of dorsal fin from insertion of first to that of last ray 3,4 in head, height 1, 5 in head ; base about 2,3 in height.

Ventrals : the long ray is represented by a stiff, flexible rod, its distal half irregularly curled, the tip itself bifid, black, but the two branchlets intimately connected by a white membrane. Distance from tip to base 3,3 in length of pectoral. A small wart-like prominence behind, at a distance equal to that of the nostrils of one side ; it may signify a second abortive ray. Clavicles cartilaginous.

On the tail the flattened interhaemal region is well defined against the more rounded vertebral portion. Length of first interhaemals, so far as is discernible from outside, about 3,2 in length of pectoral, becoming gradually shorter towards end of tail ; first anal ray about 5 in length of pectoral, the rays quickly attaining their greatest length, which is 2,5 in length of pectoral ; length of rays practically the same from the fourth ray till near end of tail, where they become a little shorter ; longest caudal rays 1,6 in length of pectoral ; no notch between anal and caudal.

Color of body a fleshy brown, somewhat reminding one of that of a dolphin's foetus ; lower parts whitish grey ; dorsal, caudal and a broad border of anal fin blackish ; base of ventrals including the abortive ray dark brown ; proximal half of ventral rays greyish brown, distal half white except the tip which is black. Pectorals black with a large, white, somewhat irregularly shaped patch over membranes and rays in the middle third of their length, not affecting the lowest part ; this white mark scarcely discernible on inner side of pectoral. A white patch on the uppermost portion of opercle, round in general outline, its diameter equaling base of pectoral. Iris yellow.

There are not many types of fishes which so manifestly betray the mode of life by their external characters as the present. The rather loose connection of the bones of the skull and the gelatinous tissues combined with the great size point to the species being a deep-water-fish ; at the same time the firmness of the bones of the skull and the color-

markings show that it is not the greatest depths that it inhabits. ALCOCK suggests that the mouth of his *Ateleopus**) *indicus* might be adapted for suction. I can support this opinion neither in the case of *Ijimaia* with its subterminal mouth, nor in that of *Ateleopus*, the soft, quite unprotected, overlapping snout of which would certainly offer great inconvenience to sucking.—The toothless mouth of only a moderate width and the weak jaws are not adapted for catching or holding quickly moving prey, the maxillaries protractile in a downward direction show that the fish is a ground feeder and not addicted to the habit of standing head down in a nearly vertical direction ("gründeln" in German) as many other fishes do, but reposes leisurely on the ground when taking food. Further, the short ventral rays reminding one of the ventral fins of certain Blennies and of the pectoral "feelers" of the Triglids and Ereunias, and the posteriorly directed vent point to a ground dwelling life: apparently we have here to do with a mud-sipper.

In the character of its tissues and of its colors this fish much resembles another animal, of the habits of which nothing is as yet known. I am speaking of the Cephalopod *Alloposus*. There too we have a similar colorless and gelatinous tissue covered over by a thin layer of the same peculiar semitransparent brownish color. I think it not improbable, that they both belong to the same bathymetrical zone, viz. 500-1000 fathoms.

I have named this species after another explorer of the Sagami-Sea, Dr. FRANZ DOFLEIN, of the University of Munich, who led me to the study of marine life, as a token of my thankfulness.

*) Most certainly the Indian species ought to be generically separated from *Ateleopus japonicus* on account of its gill-membranes being united to the isthmus.